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ABSTRACT

This study examines the relative effects of information on problem solving. An introductory section discusses theoretical approaches to problem solving. The major portion of the paper describes the author's research. In her study, subjects were asked to read a court transcript from a criminal case, to give their verdict in the case, and to recommend an appropriate sentence if necessary. Finally, subjects were asked which aspects of the transcript they considered most important in making their decisions. Each group of subjects received the same basic account of an assault and battery incident, with variables being defendent's race, presence of defense witness, and sex of plaintiff. Results indicated that subjects were more likely to favor a female plaintiff's case and less likely to favor the plaintiff when a witness testified. However, if a male was charged with assaulting a female, the presence of a witness had no effect. White assailants were more likely to be found guilty than blacks when the plaintiff was a male. Most subjects reached what was considered the correct verdict. However, subjects who did not list material facts as being most important were three times more likely to err in judgement. The experimental treatment demonstrates that the characteristics of information sources interfere with problem solving. Source credibility is particularly important. Subjects often find it difficult to disregard their feelings about individuals when making decisions. (BC)

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When Information is Constant, How do People Decide: The Relative Effects of Affect and Information on Decision Making

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Paper prepared for delivery at the annual meetings of the American Political Science Association in New York, August 1978.

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This paper reports an examination of individual problem solving behavior. Unlike much of the research on political problem solving behavior, the political actors involved in this study were confronted with a problem, aspects of which were systematically manipulated. The problem presented to these actors required an evaluation of the guilt or innocence of a 'defendant.' Since this type of evaluation is information dependent, the problem is manipulated by varying the information made available to the actors. Thus, the manipulation allows an assessment of the kinds of information individuals rely on in their problem solving efforts.

This study of politics as problem solving behavior involves three important assumptions: (1) behavioralism is accepted as a reasonable approach; (2) the individual is considered a legitimate unit of analysis; and (3) experimental control will prove a fruitful research tool. Before discussing the study itself, it may be useful to briefly consider what each of these assumptions entails.

In a fairly short time frame, behavioralism in Political Science moved from avant garde to status quo to scapegoat. Thus, arguments for and against behavioralism have become familiar themes. Pre-behavioralists argued that the study of politics is not amenable to scientific methodology because of the difficulty, if not impossibility, of quantification; behavioralists argues the need for empirically testable theories and the development of valid, reliable measures for relevant concepts; and post-behavioralists now argue that behavioralists are overly concerned with quantification, have failed to develop testable theories, and have lost sight of the truly "important questions."[1] It is not my purpose to end this debate. It seems sufficient to say the pre-behavioralists were correct in asserting the difficulties associated with quantification. And, it must be acknowledged that behavioralists have not developed a substantial body of theory. But improvements in measurement and theory take a great deal of time and effort. Critics of behavioralism often fail to properly weigh the fact that they ask of behavioralists, after only a few decades of effort, for the kind of product other modes of inquiry failed to deliver over a number of centuries.

Empirical or scientific progress does not occur at the rapid rate some critics seemingly demand. Thus, I am unable to agree with denunciations of the behavioral study of politics. While the behavioral approach has manifested weaknesses and suffered a number of failures, when looked at in the context of the history of ideas the movement is still in its infancy. There is still much work to be done if behavioralism is to turn from a mere empirical orientation to a scientific philosophy. Nonetheless, it seems reasonable to believe that the study of the political problem solving process will benefit from adopting the behavioral approach.[2]

With an interest in problem solving behavior, the fundamental unit of analysis is the individual. So it does not seem that focusing on the individual is a very stringent constraint. The individual human actor is a very complex system. Ashby points out that the "size" of a system is not related to mass alone. A system's size is determined either by "the number of states available, or....the number of its variables."[3] The size of a system is considered in terms of the researcher's ability for complete control or observation. Thus, what is a very large or comples system at one time (i.e., one which we are unable to control or measure) may be regarded a simple system when research techniques progress appropriately. Cybernetics allows two definitions of a system: (1) the system or thing as it exists, or (2) that set of states which are of concern to a particular observer.[4] Given the number of possible states the individual political actor can assume (i.e., the number of transformations which can be made) and the relative inability of the political scientist to exercise control (for example, even experimental research can only control for history in a probabilistic manner), it seems safe to assert that this research is directed at a system sufficiently large and complex as to require little justification.

Focusing on individual problem solving behavior allows the adoption of a well-established scientific procedure, to wit: experimentation. This methodological extension, in conjunction with an emphasis on methodological individualism offer advantages to research programs. This advantage should allow careful scrutiny of important behaviors, encourage replication, allow movement beyond circumstantial evidence, and expedite the development of more refined primitive terms.

Methodological individualism and experimentation work together to improve our capability for a more careful analysis of problem solving behavior and concomitant coping mechanisms. Essentially, methodological individualism affords ample justification for incorporating experimentation into the study of politics. There are, or course, other grounds on which to justify experimental inquiry. Experiments allow (1) the evaluation of hypotheses thereby encouraging (2) tests of developing theory, and (3) they minimize the ambiguity in research results.[5] The philosophy of science which argues that hypothesis texting is essential to scientific progress is so well known that it requires no elaboration here.[6] And, while not necessarily reflected in the majority of research investigations, the logic of experimental design as a means of increasing the interpretability of results is well documented in other places.[7]

Experimentation is the special problem solving logic of science. As opposed to other modes of observation (1) the experimenter makes an event happen at a certain time and place which facilitates careful and controlled observation, (2) the conditions under which an event occurred

can be re-established, thus facilitating replication and (3) conditions can be systematically varied so that concomitant variations in results can be carefully noted.[8] While it is clear that the political scientist lacks the degree of control of the physicist, optimizing available control is a desirable research strategy. Experimental designs optimize control.

The strengths of experimental models in the conduct of inquiry are numerous; but they all proceed from the increased ability of the researcher to exercise control. In efforts to achieve explanation the use of experimental designs allows (1) a clear ordering of temporal arrangements; (2) control of the environment which facilitates data collection and assures the researcher that the event of interest will occur; (3) the use of statistical procedures, like random assignment, to insure equalization at the time of treatment.[9] Experimentation is a particularly useful tool in evaluating 'competing' explanations. "Experimental observations are . . . planned in advance and designed to form a secure basis of new knowledge; . . . they are systematically related to . . . knowledge already acquired, and the results are deliberately observed and put on record accurately."[10] Campbell and Stanley identify experiments as "research in which variables are manipulated and their effect upon other variables observed."[11] All of these ideal are amplifications of the notion of control inherent in experimental research. By controlling the independent variables the researcher tries to effect the dependent variables. Any experiment is a single test of an hypothesized relationship. The accumulation of the results of multiple tests is the basis of a science.

The matter of experimental control being a necessary condition in attempts to test relevant propositions has been addressed in a variety of places. Sidman argues that it is the development of techniques of experimental control over subject matter which allows distinctions among the sciences; Rosenberg considers statistical control only an attempt to approximate experimental control; Campbell views experimentation as a refining process, one which allows careful examination of those things we believe we know from careful observation.[12] The complexity of political behavior, the primitive measurement techniques available to political scientists, and the need for careful tests of theories of political behavior make correlation analysis an inadequate research tool.[13]

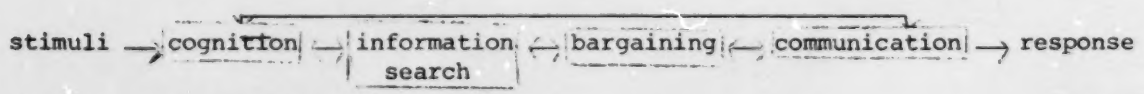
Clearly, individuals exist in a variety of contexts; they behave alone, in large and small groups, and play a number of societal roles. The individual in a group or a particular role is operating in a system of constraints.[14] This is simply a reiteration of the position that behavior is a function of the interaction of the organism and the environment. Thus, the behavior of other individuals, rules, roles, and past experiences of the organism are a part of the environment with which the individual interacts at various times.

Substantive knowledge about political problem solving generally accures from observing behaviors. We learn about legislature, executives, judges, bureaucrats by observing relevant actors. But there are serious problems associated with attempting to gain scientific understanding by considering on-going processes. For example, researchers encounter problems of access; we must wait for events of interest to happen; we are often overly dependent on subject recall; and among other problems opportunities to replicate studies are seldom available.

This research overcomes the difficulties associated with making natural observations in two ways. First, politics is conceptualized in terms of problem solving activities and logics allowing its study in terms of a human information processing system. This theoretical orientation recognizes the importance of system derived constraints - such as those created by long-term processes and institutional mechanisms - but it also emphasizes the role of individuals in the exercise of choices and judgments. Second, definint the observational methods in terms of the aspects of the problem I intend to study allows increased latitude in research design. Focusing on the individual's use of information and on problem solving logics in making judgments and exercising choice provides an opportunity to use experimental procedures to investigate political behavior. By making use of experimental procedures it is possible to specify what the individual knows about the problem at hand; the experimenter defines the problem and controls the information available.

The problems presented to subjects who participated in this experiment are multidimensional. The basic issue involved in this study concerns how individuals process information without the constraints of (1) peer interaction and (2) responsibility to the larger social system.

Accepting the definition of politics as a problem solving process, focusing on the individual's behavior, and emphasizing experimental rather than correlational analysis suggests this four-stage model of the problem-solving process as an appropriate framework for discussion.[15]



Because this research project did not allow interaction this discussion is limited to stimuli (i.e., information), cognition (i.e., understanding

of the problem and information use), and response (i.e., resolution of the problem).

In most situations individuals are bombarded with more information than they can process in a short period of time. In a ten minute noon-time walk in Manhattan, for example, the pedestrain is confronted with more information about objects and events than can be processed or used. In such situations the individual can safely ignore most of the available stimuli, choosing instead to attend to information which seems useful to the navigational task at hand. Thus, the successful pedestrial, well practiced in the art of moving through traffic will selectively perceive stimuli ignoring irrelevant information and attending instead to that which is at least potentially useful. As a seasoned pedestrian gives evidence of a kind of 'unconscious' behavior it may be that a trained perceptual filter is operating.[16]

A perceptual filter makes it possible for the individual to function. The individual avoids an information overload because some information is denied access to the system. In more serious problem solving situations, perhaps especially in unique situations, a perceptual filter might interfere with the individual's ability to find an appropriate solution. Information which is screened out because it has not been useful in the past is not available to the problem at hand. Thus, a perceptual filter is potentially useful and potentially dysfunctional. The perceptual filter limits the capacity of the individual to attend to, process, and respond to information.[17] As such it may represent a critical component of problem solving behavior.[18]

Finding solutions to new kinds of problems may depend on the individual's ability to attend to information which has not been problem relevant in the past. Necessary information may be available but not attended to for any of a variety of reasons; e.g., it may come from an incredible source; it may be a type of information not useful in the past; it may conflict with other information which has been useful in the past; it may require the reorganization of other previously stored information.[19] If new types or sources of information are to be available to the problem solver, it may be necessary for the perceptual filter to be reordered so that messages previously screened out can be evaluated as potential solution strategies. Thus, a perceptual filter represents an internal constraint which may facilitate problem solving in some cases and inhibit it in others.

One additional internal constraint on problem solving bears amplification. The ability of any individual or group to use information is limited by the attention they are able to pay to the to the situation. While an individual is attending to one thing they cannot

simultaneously attend to something else. All kinds of human activity are attention limiting.[20] One cannot, for example, type and engage in conversation at the same time. In 1890 Biney reported that the task of mental addition interferred with the ability to squeeze a rubber ball at a regular rate for a predetermined number of times.[21] Welch showed that ability to maintain a strong hand grip deteriorated with the performance of some mental tasks, among those tasks was mental arithmetic operations.[22] The extent to which one's ability to attend to information is limited and the relative saliency of competing tasks no doubt interfered with the individual's ability to solve political problems as it interferes with non-political tasks.

Internal constraints are not the only limiting parameters operating on the individual confronted with a problem. In any situation, at any place and time, there is a finite amount of problem relevant information available. These constraints are more apparent in some situations than in others. Consider, for example the American voter who is forced to choose among candidates for even so salient an office as that of president. Candidates typically reiterate only their most general position on a very limited number of social issues. Take, for example, the issue of the Viet Nam war in the 1972 Nixon-McGovern race. Both candidates promised to end the war, one with a secret strategy and the other with a timetable for withdrawal. There was general agreement that the war should end, on that one point the candidates were indistinguishable. The candidates differred on the matter of how to "best" end the war. The choice presented the voter: (1) a secret solution based on information only an incumbent president could access, or (2) a precise timetable for withdrawal. The voter is asked to select the best method of reaching an agreed upon solution with a limited amount of information and undoubtedly little prior experience in selecting 'best strategies' for ending wars.

Information constraints plague the problem solving process at all levels of the political system. Juries are asked to render verdicts when presented with conflicting testimonies; some kinds of information which individuals might consider helpful in reaching verdicts are systematically withheld because they are considered potentially prejudicial. The limited ability of a witness to a crime to perceive and recall all of the potentially relevant factors is a constraint on a jury forced to evaluate second hand testimony. Or, consider the Nixon energy conservation plan which predicted future availability and cost only to be "outwitted" by the coldest winter on record. This single unpredictable event in turn effected consumer prices for fuel and other commodities, employment rates, and the gross national product. Whether through systematic screening, unpredictability or some other constraint, political problem solving clearly requires that individuals act with incomplete information.

Research indicates that people believe problem solving is important and relevant as their ability to respond directly to problem related information increases.[23] Thus, it is reasonable to expect political participants will pay more attention to messages regarding decisions they believe they can effect. Other research indicates that characteristics of the information environment effect behavior; subjects forced to make important or irrevocable decisions based on conflicting or incompatible information acquire high levels of information prior to making decisions.[24] Experimental subjects attend to information they believe is important to solving the problem at hand. Subjects' perceptions of information relevance depends in part on their ability to respond to stimuli.[25]

Considered in light of this experimental evidence, survey research which indicates low levels of political information among certain groups (e.g., the poor, blacks, and other minorities) could be interpreted as a simple extension of the kinds of behavior we would expect of all individuals in low response opportunity environments. In lieu of suggesting that certain groups are disinterested in politics, it seems reasonable to argue that certain aggregate characteristics of individuals place them in environments where attending to political messages is unimportant because there are no meaningful responses available to individuals. Conversely, the politically informed tend to be politically active; they have found ways to respond to political messages and thus attend to the messages more carefully.[26]

Even when an individual is intent on solving a problem there is no guarantee that the information they attend to is the most objectively useful. Social science literature provides us with numerous examples of 'selective attention.' Thus, voters with a strong party preference attend more carefully to messages from their own political party; they attribute positions to their own party which are consistent with their own feelings.[27] When political candidates suggest that indumbents have advantages they are suggesting, among other things, that holding political office confers credibility on an individual.

This type of source effect has been documented in a variety of research investigations. Messages from credible sources are thought to be more 'just' and accurate than messages from low credibility sources.[28] People believe that information which is inconsistent with their beliefs is ill-informed and unfair.[29] Subjects stereotype social groups and abstract stimuli; i.e. they underestimate differences within groups and overestimate differences across groups.[30] Even attitude change is less dependent on information than on the credibility of the information source. Identical messages from sources with different credibility levels result in different amounts of attitude change.[31] Thus, it appears that information (i.e. uncertainty reducing stimuli) are not the only, and in some cases may not even be the primary,

environmental stimuli individuals use to solve problems.

My experiment was designed to test for the relative effects of information and affect on problem solving. Subjects from three state universities were presented with multidimensional problems. Subjects were told that they were participating in a study of judicial behavior; that they would be given a court transcript from a criminal case. They were instructed to read the case carefully, then respond to the questions attached to their transcript.

The case was chosen because of the type of problem and its relation to available information. The case provided subjects with material facts which were both necessary and sufficient to allow a 'correct' judgment. But the transcript was not limited to material facts. Thus, subjects could confound their task by misweighting material and immaterial facts. They could choose to ignore material facts entirely. Subjects were allowed a range of solution strategies. Subjects might (1) stick to the material facts in the case, and reach a 'correct' decision rather simply; (2) confound their problem by attending to material and immaterial facts, and thereby increase the likelihood of an 'incorrect' decision; or (3) rely solely on immaterial facts.

The defendant was charged with assault and battery. The testimony reports a fight allegedly over a pack of cigarettes and a twenty dollar bill the defendant had placed in the cigarette pack. Ownership of the cigarettes is one source of conflicting testimony; in addition, both plaintiff and defendant assert that their behavior was reasonable, that the other party engaged in verbal abuse in spite of their own attempts to be reasonable. It is noteworthy that neither argues they were never abusive in their language, rather that each tried to be reasonable at the outset. Neither details their subsequent verbal behavior in their own testimony. Both plaintiff and defendant agree on five other points: (1) where the disagreement began; (2) where the fight occurred; (3) who threw the first punch; (4) advantages attendant to size; and (5) severity of injuries. The experimental treatment itself varied the sex of the plaintiff, the race of the defendant, and the presence or absence of a witness. The witness corroborates some aspects of the story but offers no new information. The witness agreed that the plaintiff was verbally abusive, that the defendant threw the first punch, and that the fight was serious. The last two issues were never seriously disputed by either plaintiff or defendant. Finally, the judge provided definitions of assault and battery.

There was no disagreement among sources regarding the critical aspects of the case; the testimony and the judges' definition of battery makes it clear that battery is the physical abuse of another individual and that such abuse did indeed occur. Thus for subjects to find the defendant not guilty requires that they find some immaterial fact on which to base

their decision or that they ignore, misinterpret, or inaccurately process the available information.

There were twelve different levels of the experimental treatment. The following visual display may help clarify treatment levels.

Sample Size for Each Level of the First Experimental Treatment

DEFENDANT	PLAINTIFF			
	Male		Female	
	Witness	No Witness	Witness	No Witness
Male	(n=50)	(n=33)	(n=45)	(n=44)
Black Male	(n=42)	(n=49)	(n=42)	(n=45)
White Male	(n=45)	(n=31)	(n=42)	(n=46)

The post-treatment questionnaire was identical for all subjects; all references to the plaintiff used a first initial in lieu of a name; there was no reference to the race of the defendant; nor were there ever specific references to the witness' testimony. Subjects were asked their verdict in the case; those who found the defendant guilty of a criminal offense were to recommend a sentence. Subjects were asked to list those aspects of the transcript they considered most important; what kinds of additional information would have been helpful to them in reaching a decision; and what aspect of the case seemed most unusual. In addition, subjects were asked if they felt the compalint was well founded, and if they believed this kind of case represented a serious problem in society.

Let me try to summarize the relationship between this test and the human problem-solving model developed earlier. I cast subjects into the role of problem solvers and controlled the amount of relevant information available (environmental stimuli). The treatment included a systematic variation in source characteristics (i.e., race and sex). The extent to which subjects inaccurately construe facts in the case, or disregard the facts of the case is a measure of the confounding of affect on problem solving. This kind of perceptual bias should be apparent in verdict and sentencing decisions. Table 1 presents the simple relationship between treatment level and verdict.

TABLE 1

Verdict by Sex of Plaintiff, Race of Defendant, and Testimony of Witness

Male Defendant Characteristics	Male Plaintiff			Male Defendant's Characteristics	Female Plaintiff		
	Verdict				Verdict		
	Guilty	Not Guilty	Total		Guilty	Not Guilty	Totals
None	76% (N=25)	24% (N= 8)	100% (N=33)	None	91% (N=40)	9% (N= 4)	100% (N=44)
None but with Witness	62% (N=31)	38% (N=19)	100% (N=50)	None but with Witness	91% (N=41)	9% (N= 4)	100% (N=45)
White	90% (N=28)	10% (N= 3)	100% (N=31)	White	91% (N=39)	9% (N= 4)	100% (N=43)
White with a Witness	83% (N=38)	17% (N= 8)	100% (N=46)	White with a Witness	87% (N=39)	13% (N= 6)	100% (N=45)
Black	77% (N=37)	23% (N=11)	100% (N=47)	Black	98% (N=43)	2% (N= 1)	100% (N=44)
Black with a Witness	67% (N=28)	33% (N=14)	100% (N=42)	Black with a Witness	76% (N=32)	24% (N=10)	100% (N=42)
Total	N=187	N=63	N=250	Total	N=234	N= 29	N=263
	75%	25%	100%		89%	2%	100%

Total n = 513 (missing cases = 6)

$X^2 = 39.57$

$\alpha = .0000$

Cramer's v = .28

The table clearly indicates that other things being equal subjects are much more likely to find for a female plaintiff. Note further that other things being equal subjects are less likely to find for the plaintiff when a witness testifies. The single exception here is the case where an unidentified male assaults a female; here the proportion of guilty verdicts does not change in the treatment where a witness testifies. In all other comparisons when sex of plaintiff is held constant and race of defendant is held constant the proportion of guilty verdicts decreases when a witness' statement is presented to subjects. Recall from the description of the scenario that the witness does not add information; the witness corroborates the defendant's claim that the plaintiff had been verbally abusive. The witness goes on to report that the defendant was the first to strike a blow -- a matter never in dispute. The witness, plaintiff, and defendant all agree regarding the defendant's guilt, but subjects are more likely to render a not guilty verdict when a witness' testimony is presented. Apparently, the presence of a witness confounds the simple facts of the case; subjects may be responding to the introduction of mitigating circumstantial information presented when the witness corroborates the defendant's charge of verbal abuse.

Having noted that sex of plaintiff appears to act as a problem-solving clue for subjects, and that the introduction of a third testimony appears to confound but does not override that clue we can explore the effect of race on verdict choice. The inclusion of race as a treatment variable was motivated by the same logic as the inclusion of sex as a variable; both may serve as aggregate environmental cues which may effect the problem-solving logics of individuals. The relationship here is not as clear cut as the pattern for sex as a variable; When the assailant is a white male and no witness' testimony is provided, subjects vote guilty in equal proportions regardless of the plaintiff's sex. In fact, only when the assailant is a white male and no witness is present does the proportion of guilty verdicts for a male plaintiff approximate the overall conviction rate for a female plaintiff. Again, other things being equal white assailants are more likely to be found guilty than black assailants with one notable exception. Only when a black defendant assaults a female without a witness does the relationship reverse. This treatment level results in the highest conviction rate; 98 percent of the subjects who read this scenario entered a guilty verdict. In general, it appears that sex and race effect subjects' decisions; these decision making patterns are tempered when the treatment is confounded with an additional information source, even one which provides no new information, but the general pattern remains unchanged.

Social scientists have long pointed to the aggregate effects of race and sex-based prejudices. These arguments are frequently countered with claims that apparent aggregate levels of discrimination are reflections of the preferences, behaviors or abilities of the individuals

discriminated against. This data clearly suggests that both sex and race of information effect decision making behavior. What is surprising is the apparent 'reverse discrimination' pattern found when the defendant is a white male. With the single exception of a black male assaulting a female where no witness' testimony is present, judgments are rendered against white male defendants in higher proportions than against black defendants. This preliminary analysis appears to support the idea of prejudicial behavior in problem solving situations; that white males are a group against whom unfavorable verdicts are rendered disproportionately often is unexpected.

An examination of Table 2 indicates that there is little, if anything in the way of source effects influencing verdicts.[32] Subjects prefer light or moderate sentences to severe ones. The coding was done so that only prison terms, alone or in conjunction with some other penalty constitute severe sentences. All non-prison alternatives (e.g. payment of attorney or physicial fees, participation is a rehabilitation program - if directed at the defendant only are considered moderate, if directed at both plaintiff and defendant are considered light) are not severe penalties. It seems from an examination of this data that there are two possibilities with respect to sentencing: either (1) subjects do not allow affect to interfere with their sentencing preferences, or (2) they simply prefer 'repayment and rehabilitation' as forms of punishment.

TABLE 2

Sentencing Patterns within Levels of the Experimental Treatment

Treatment/Source Characteristics	Sentence		
	Light	Moderate	Severe
Male, no witness	19% (n=19)	23% (n=54)	19% (n=14)
Female, no witness	24% (n=24)	29% (n=68)	41% (n=30)
Male, with witness	25% (n=26)	24% (n=56)	18% (n=13)
Female, with witness	32% (n=33)	27% (n=55)	22% (n=16)
TOTALS	100% (n=102)	100% (n=233)	100% (n=73)

x^2 = N.S. (Missing cases = 111, includes 96 not guilty verdicts)

I have repeatedly focused attention on source credibility, albeit at an aggregate level. The effectiveness of a message in convincing the receiver of its validity is commonly assumed to depend on the source of the message.[33] Thus publicity campaigns use the names of prominent individuals as endorcers; and, in general advertisers select sources their clientele turn to frequently to display their wares. Candidates for minor political offices seek the endorsement of major political figures in efforts to enhance their credibility and increase their name recognition among voters; political columnists attribute their information to "White House sources" in efforts to increase their credibility. In order to evaluate the extent to which subjects' verdicts correspond with their perceptions of the information sources the posttest questionnaire specifically requested that subjects identify the individual whose testimony they considered most believable.

It is important to remember that all subjects received the same information, from similar sources. It is clear from Table 3 that subjects find reasons for discriminating among sources and that their verdicts vary depending on the message source they consider most credible. I have elaborated elsewhere on the obvious guilt of the defendant; the defendant admits his guilt. Still, there are subjects who think the defendant provides the most credible testimony and these subjects are less likely to find the defendant guilty than other subjects. It is also important to consider the estent to which subjects who consider the witness the most credible information source render not guilty verdicts. The witness' testimony does not mitigate against the defendant's guilt, but subjects are less likely to find for the plaintiff if they believe the witness credible than if they believe the plaintiff is the most credible information source. Evidently, those subjects who believe an information source other than the plaintiff find immaterial grounds on which to justify their not guilty verdicts.

Thus far I have spent a good deal of time suggesting that affect makes a difference in problem solving situations. Clearly the data substantiates this position. Yet it would be inappropriate to ignore the possibility that information is relevant to individuals in problem solving situations. Perhaps more to the point, the implication of much of this paper is that individuals who rely on affect in problem solving situations are likely to make inappropriate choices. The implication of such a position is, of course, that individuals who rely on information in problem solving situations are more likely to make correct choices. This is clearly an empirical question and happily the data coincides with the expectation. The posttest questionnaire asked subjects to cite the three most important factors influencing their decision. If a subject listed a material fact in response to this question they are placed in the 'used information' category. Table 4 shows the relationship between use of material facts and verdict.

TABLE 3

Verdict by Choice of Creditable
Information Source in the Assault Case

Verdict	Most Creditable Source			
	Plaintiff	Defendant	Witness	Total
Guilty of Assault	94% (N=186)	70% (N= 95)	75% (N= 82)	(N=353)
Not Guilty of a Criminal Offense	6% (N= 11)	30% (N- 41)	25% (N= 28)	(N= 80)
Totals	100% (N=197)	100% (N-136)	100% (N-110)	100% (N=436)

N = 443

η^2= .003

(Missing cases = 76; missing cases include subjects who failed to respond to either or both of the items.)

x^2= 38.21

α = .00001

Cramer's v = .29

TABLE 4

Verdict by Use of Material Facts

Verdict	Report of Information Use: Did Not Use Material Facts	Did Use Material Facts
Guilty	77% (n=260)	92% (n=161)
Not guilty	23% (n=78)	8% (n=14)
TOTALS	100% (n=338)	100% (n=175)

$x^2 = 16.79$
$\chi = .0000$
$\phi = .18$

Since there is a 'correct' answer to the problem confronting subjects it is relatively easy to determine the relative effectiveness of information is reaching a correct decision. The data suggests that subjects who use material facts are unlikely to decide the defendant is not guilty. Most subjects reach the correct decision; but then the cards are stacked in the plaintiff's favor. Subjects who do not use material facts in deciding the case are three times more likely to reach an inappropriate decision that subjects who use material facts to decide the case.

Table 5 examines the use of material facts within levels of the experimental treatment. There is actually very little to be said about the table. Subjects are less likely to use material facts in deciding the case where only males and no witness are involved. Subjects confronted with a male-female fistacuffs are a little more likely to cite a material fact as important in deciding the case, but the chi square for the table is not significant thus it warrants little discussion.

I have argues for the micro-level analysis of political behavior because that behavior is a complex process. In a very general sense this is a concern with the way people think about politics and political problem solving. Thus even at the micro-level of analysis, given the present state of instrumental development in political science, it is

TABLE 5

Use of Material Facts in Deciding the Case Within Levels of the Experimental Treatment

Treatment Characteristics	Decision Criteria		
	Did not use Facts	Used Facts	Totals
Males, no witness	73% (n=82)	27% (n=31)	100% (n=113)
Female, no witness	63% (n=85)	37% (n=50)	100% (n=135)
Males, with witness	66% (n=92)	34% (n=47)	100% (n=130)
Female, with witness	64% (n=84)	36% (n=48)	100% (n=132)

x^2 = n.s.

difficult to evaluate unobservable intervening variables or processes based on observed behavior.[34] To facilitate analysis it may be useful to conceptualize thinking as a three-stage process. The first stage involves perception, screening, and organizing stimuli. The second stage, the problem solving stage, requires that the individual formulate responses to environmental stimuli. Problems are generally said to confront an individual when (1) there is a specific goal desired, or an alteration in the present situation is desirable, (2) the individual is forced to try to effect the desired outcome because it does not simply occur, and (3) a range of alternative responses is possible. Problem solving assumes the appropriate use of relevant information; this use is, of course, dependent on the availability of such information. The third stage is decision making, a requisite in any situation where the individual has more than one possible response. Problem solving is a selction process.[35] Wertheimer suggests that problem solutions arise not from blind recall of past experience, nor from blind trial and error attempts, but rather that successful problem solving results from accurate (i.e. problem relevant) perception of the situation.[36] The solution is in the problem itself; it simply requires an appropriate understanding.

Thus far my discussion of problem solving has suggested that a number of distinct elements may contribute to decision making behavior. Perception, or an understanding of the relevant aspects of the situation is the first step. The individual must attend to, be able to sort and

process problem specific information before an appropriate response can be organized. In the experimental treatment I confronted subjects with a relatively simple, straightforward problem; subjects were to decide guilt or innocence in an assault and battery case where all parties agree the relevant events occurred. I attempted to confound the simplist case by introducing variants of race and sex, and further with the insertion of a witness' testimony. The material facts of the case are never altered. The posttest questionnaire solicited information from subjects on verdict, and gathered information on their use of material facts in deciding the case, the testimony they considered most relevant in deciding the case, and their ability to recall specific facts from the transcript they read. The pretest questionnaire solicited information on personality, additudes, and cognitive complexity. While these have not been discussed in this paper they are introduced here with the assumption that they are generally understood as behavioral indicators in the discipline, and because they are necessary for the analysis to continue.

Verdict and sentence are dependent variables in a model where I suggest that variance is due to the effects of the experimental treatment, specifically sex of plaintiff, and presence or absence of a witness' testimony, the use or failure to use material facts in deciding the case, whoice of a specific information source as more credible than the alternatives, and recall of factual information from the transcript itself. (Recall may be considered a measure of attention to the material presented in the transcript.) I have added a fifth independent variable to the model, sex of subject. One might reasonable argue that sex of subject is more appropriately thought of as a covariate; I have not used it as a covariate for two reasons. First, using sex as a covariate requires a violation of an assumption of the statistical technique employed. Covariates are assumed to be interval level varaibles; the analysis of variance-covariance model is relatively robust, i.e. insensitive to violations of assumptions, but it seems reasonable to avoid violations of assumptions whenever possible. My second rational is empirica;; it is appropriate to control for the effects of a covariate when there is reason to believe that the covariate has produced some bias which was uncontrolled in random assignment. Controlling for the effects of bias increases the precision of the estimates. As the data was readily available, the model using sex as a covariate was run with both verdict and sentence as dependent variables. In both cases, the effect of sex of subject as a covariate was highly unreliable. Controlling for the effect of sex of subject on sentence had an effect size, or variance estimate equal of .001, with alpha equal to 0.982. The effect size is larger and more stable when the dependent variable is verdict (F=1.5; alpha = .22); however, when the effect of attitudes of subjects toward the rights of minorities is held constant instead of sex of subject the effects of other covariates become more stable. Finally, sex functions as a reliable main effect in the model predicting verdict in the assault case. Thus, I decided to emply measures of cognitive complexity, attitudes toward civil rights, fear of crime, and minority rights, and the personality traits of dominance and control as covariates and use sex of subject as a factor in the evaluation of behaviors in the first experimental treatment.

Not all of the hypothesized covariates provide reliable estimates of bias; in fact, it appears that different dependent variables are differentially effected by the covariates. I am presenting the model with all covariates to facilitate comparison of the manner in which constraints effect different behaviors. For the analysis which follows I accept a probability of a Type I error of five percent; we fail to reject the null if we are likely to erroneously reject a true null more than five times in one hundred.

The effects of each of the independent variables and each of the constraints on verdict are summarized in Table 6. The most striking result is that none of the covariates is assocaited with a reliable increase in precision. None of the variables I postulated as constraints on verdict results in either a sizeable or reliable reduction in bias. It appears that verdicts are not seriously constrained by cognitive complexity, attitudes toward civil rights and crime, or the rights of minorities, or personality dominance or control.

Three of the main effects produce reliable reductions in error variance, the effect of the experimental treatment, evaluation of the source of the most credible testimony, and the use or failure to use material facts in deciding the case. The entire model explains 17% of the overall variance. Subjects' assessments of source credibility explains seven percent of the variance in subjects' verdicts; this variable explains forty one percent of the variance which the entire model can explain. Verdicts are dependent on subjects' perceptions of the individuals presenting testimony. Levels of the experimental treatment account for five percent of the variance in subjects' choice of verdicts. Subjects do not render verdicts based strictly on the merits of the case. Verdicts depend on subjects' responses to aggregate characteristics of the plaintiff, in this case sex, and the presence of what subjects appear to consider mitigating evidence in the form of a wtness' statement. The use or failure to use material facts in arriving at verdicts has a reliable effect on verdict. The use of information allows subjects to decide the case on its merits - the variable explains three percent of the variance in subjects' verdicts. Use of meterial evidence is less important in predicting verdicts than either perceptions of the individuals who are offering testimony, or the confounding effects of the plaintiff's sex or the witness' testimony. Subjects do not render verdicts based on the merits of the case. Subjective evaluation of message source is the best predictor variable in the model.

Only one two-way interaction is reliable, the interaction of sex of subject and level of the experimental treatment. As I have not previously explored the relationship between sex of subject and behavior it is useful to take a look at the interaction itself; it is displayed in Table 7. Overall, males are more likely to enter not guilty verdicts than females. Judgments of female subjects are less tempered when a

TABLE 6

Summary Table of Sources of Variance in Sentencing in the Assault Case

Source	Sum of Squares	D.F.	F	Signif of F
Covariates	4.806	5	1.86	.100
Cognitive Complexity	.119	1	.23	.631
Personality Dominance	1.330	1	2.57	.109
Personality Control	1.158	1	2.24	.135
Minority Rights Scale	.901	1	1.74	.187
Liberties-Crime Scale	.123	1	.23	.625
Main Effects	40.068	9	8.63	.001
Treatment Effect	10.648	3	6.88	.001
Creditable Source	15.183	2	14.71	.001
Material Fact Use	9.703	1	18.78	.001
Factual Recall	.066	2	.06	.938
Sex of Subject	1.435	1	2.78	.096
Two-Way Interactions	17.896	31	1.12	.307
Treatment/Info Source	5.653	6	1.83	.093
Treatment/Material Fact	.202	3	.13	.942
Treatment/Recall	1.830	6	.59	.738
Treatment/Subject Sex	4.580	3	2.96	.032
Info Source/Material Fact	1.107	2	1.07	.343
Info Source/Recall	.863	4	.42	.795
Info Source/ Subject Sex	.781	2	.72	.470
Material Fact/Recall	.429	2	.42	.661
Material Fact/Subject Sex	.009	1	.02	.895
Recall/Subject Sex	.384	2	.37	.690
Explained	62.767	45	2.70	.001
Residual	202.868	393		
Total	265.636	438		

80 cases (15.4%) were missing

R^2 = .169

witness is present and the plaintiff is a female than are verdicts of male subjects inthe same treatment condition. Male subjects enter guilty of assault and battery verdicts in higher proportions than female subjects when a female plaintiff's testimony is not tempered by the testimony of a witness. Female subjects enter not guilty verdicts in lower proportions than male subjects in all treatment conditions except that in which a female plaintiff's testimony is not accompanied by that of a witness. The extent to which conviction rates are effected by perceptions of status roles appears to be less obvious in the decisions of females than in the decisions of males.

An examination of the entire model as a predictor of sentencing as displayed in Table 8 suggests that some of the covariates operate as constraints on behaviors. Three of the covariates, cognitive complexity, and the personality traits of dominance and control contribute reliably to increased precision in the estimates of sentencing. Subjects with low scores on the personality dominance scale are less likely than other subjects to give light penalties and more likely than other subjects to give severe penalties. Sentencing patterns for subjects who receive moderate or high scores on the personality dominance scale follow a single pattern, they are least likely to assign a severe penalty and more likely than subjects with low scale scores to assign light penalties.

The personality control scale follows a different pattern. Subjects with high scores are less likely than subjects with moderate or low scale scores to assign light penalties. Subjects with low scores on the personality control scale assign severe penalties in lower proportions than do subjects with either moderate or high scale scores.

This pattern is reversed for subjects with high scores on the cognitive complexity measure. The more cognitively complex subjects are more likely to assign a light penalty in the assault case than subjects with moderate or low complexity scores. Correspondingly, the more cognitively complex subjects are the least likely to assign severe penalties in the case. Subjects with moderate or low scores on the cognitive complexity measure assign harsh penalties in approximately the same proportions. Tables 9a,b,c display the relationships between personality dominance, personality control, and cognitive complexity with sentencing in the assault case.

Subjects assessments of the credibility of individuals presenting testimony is the only significant main effect in the model using sentencing as the dependent variable. The entire model reduces error variance by eleven percent; evaluation of credibility of information source explains five percent of the total variance, nearly half accounted for by the entire model. It appears that for some types of decisions the

TABLE 7

Assignment of Verdict Within Levels of Experimental Treatment by Sex of Subject

	Sex of Subject: Treatment Characteristics: Female				
Verdict	Male Plaintiff	Female Plaintiff	Male with Witness	Female With Witness	Total
Not Guilty	17% (N=11)	7% (N=5)	28% (N=20)	13% (N=9)	16% (N=45)
Guilty of Assault	23% (N=15)	31% (N=22)	29% (N=21)	14% (N=10)	25% (N=68)
Guilty of Assault & Battery	59% (N=38)	61% (N=43)	43% (N=31)	74% (N=53)	59% (N=165)
Totals	100% (N=64)	100% (N=70)	100% (N=72)	100% (n=72)	100% (N=278)

$X^2 = 21.25$

$\eta^2 = .007$

$\alpha = .0017$

TABLE 7 (continued)

Assignment of Verdict Within Levels of
Experimental Treatment by Sex of Subject

Sex of Subject

Treatment Characteristics

Male

Verdict	Male Plaintiff	Female Plaintiff	Male With Witness	Female With Witness	Total
Not Guilty	24% (N=11)	7% (N=4)	32% (N=21)	19% (N=11)	20% (N=47)
Guilty of Assault	26% (N=12)	21% (N=13)	23% (N=15)	24% (N=14)	24% (N=54)
Guilty of Assault & Battery	50% (N=23)	72% (N=44)	45% (N=29)	58% (N=34)	56% (N=130)
Totals	100% (N=46)	100% (N-61)	100% (N-65)	100% (N-69)	100% (N-231)

$X^2 = 15.54$

$\eta^2 = .06$

$\alpha = .016$

TABLE 9

Summary Table of Sources of Variance in Sentencing in the Assault Case

Source	Sum of Squares	D.F.	F	Significance of F
Covariates	7.382	5	3.83	.002
Cognitive Complexity	1.545	1	4.01	.046
Personality Dominance	1.661	1	4.31	.039
Personality Control	2.544	1	6.60	.011
Minority Rights Scale	.149	1	.39	.534
Liberties-Crime Scale	.696	1	1.80	.180
Main Effects	8.432	9	2.43	.011
Treatment Effect	1.893	3	1.64	.181
Creditable Source	3.486	2	4.52	.012
Material Fact Use	.846	1	2.19	.140
Factual Recall	.059	2	.07	.928
Sex of Subject	.024	1	.06	.803
Two-Way Interactions	13.443	31	1.13	.303
Treatment/Info Source	4.042	6	1.75	.110
Treatment/Material Fact	3.188	3	2.75	.043
Treatment/Recall	2.955	6	1.28	.268
Treatment/Subject Sex	1.790	3	1.55	.202
Info Source/Material Fact	.243	2	.32	.730
Info Source/Recall	.351	4	.23	.923
Info Source/Subject Sex	.126	2	.16	.849
Material Fact/ Recall	.119	2	.15	.857
Material Fact/ Subject Sex	.238	1	.62	.432
Recall/Subject Sex	.939	2	1.21	2.93
Explained	29.257	45	1.69	.006
Residual	117.804	305		
Total	146.860	350		

168 (32.4%) were missing

R^2 = .108

only reliable predictor variable is subjects' perceptions of message source. Source credibility is the only reliable explanatory variable for both verdict and sentencing decisions in this experimental treatment.

There is only one significant two-way interaction in the model, the interaction of treatment and use of material facts in arriving at sentencing decision. The type of decision criteria subjects employ as the reader will recall from earlier discussion, is relatively constant across 3 of the 4 treatment levels. But, subjects who are confronted with a male only assault case are less likely than subjects in other treatment categories to cite material facts in arriving at their choices. In general, the model accounts for less of the variance in sentencing than in verdict. It may be that the sentencing decision is sufficiently removed from the immediate decision that patterns are less apparrent.

Throughout the data based section of this paper I have tried to focus attention primarily on the role of cognition in the problm solving process. Most attempts to explain political behavior implicitly or explicitly assume some level of cognitive awareness on the part of the relevant actor. I have tried to address the question of the degree to which responses are appropriate reactions to stimuli. Experienced problem solvers develop a repertoire of coping mechanisms which they will use when their perceptions of a problem indicate that a particular solution strategy would be appropriate. Individuals use perceptual filters as screening mechanisms to limit their intake of environmental stimuli. Screening out irrelevant information makes it possible for people to cope, but when screening limits or distorst relevant information it will impede performance.

In general, it seems reasonable to suggest that individual problem solving logics are not the simple straightforward information processing mechanisms which would allow optimal solutions to be easily achieved. The experimental treatment clearly indicates that aggregate characteristics of information sources may interfere with problem solving. In addition, the addition of a witness' testimony, if it corroborates any aspect of the defendant's testimony, helps to mitigate against a guilty verdict. Subjects' evaluations of appropriate sex role behavior, their perceptions of the impropriety of racist statements, their willingness to be misled by an eyewitness' statement, and their willingness to make decisions based on immaterial information are apparrant throughout the analysis.

This data strongly suggests that source credibility is particularly salient in problem solving behavior; it appears to lend credence to the adage 'first impressions count.' Subjects tend to render verdicts in accord with the information provided by the individual whose testimony they consider most believable. It appears that the merits of a case

are in fact subjective assessments of primarily irrelevant information.

Sex of subject appears to make a difference in deciding guilt or innocense; males are more likely to enter not guilty verdicts in the assault case than are famales. Males are correspondingly less likely to enter the most severe verdict in the case, i.e. guilty of assault and battery. Females are more likely than males to enter harsh verdicts when both parties in the disupte are males and there is no witness' statement, and when a plaintiff is a female and a witness testifies. Males enter a disproportionately high percentage of harsh verdicts only when the plaintiff is female and there is not a witness' statement. It may be that males are less bothered by a fistacuff than females, thus in general are more likely to enter not guilty verdicts. It also seems that males are unable to account for such brawls between the sexes unless additional testimony is presented; additional testimony allows males to treat the intersexual assault in much the same manner as they treat unisexual assault.

In summary, it appears that problem solving logics are more dependent on perceptions than on information in an objective sense. When forced to make decisions based on the conflicting testimony of individuals, subjects temper their judgments with kindness toward that individual whom they consider most credible. The effects of information on behavior may be more subtle than one would expect in that information tends to effect sentencing even more strongly than verdict. This in no way suggests that information is unimportant. Information is the 'best' way, the most reliable path subjects can choose in their efforts to reach a correct decision. Subjects are unable to seperate their feelings toward individuals in their evaluations of behavior; affect is one of the best predictors of behavior.

I have tried to isolate several determinants of problem solving behavior. Within the context of highly limited information, subjects' decisions are evaluated. In general, it appears that problem solving logics adopted by individuals are functional in the sense that they allow the individual to reach decisions quickly and with a minimum amount of conflict. Individuals decide who they like, which in turn determines who is telling the truth and thus how punishments should be meted out. It appears that subjects believe 'intuition' is a legitimate decisional criteria and temper their evaluations of facts with their 'instinctive' judgments. Subjects make little attempt to conceal this type of logic, thus, it would appear that they consider it a legitimate problem solving strategy.

TABLE 9a

Sentencing in the Assault Case
by Personality Dominance

	Personality Dominance			
Sentence	Low	Moderate	High	Totals
Light	20% (N=22)	28% (N=41)	27% (N=39)	25% (N=102)
Moderate	58% (N=66)	55% (N=82)	58% (N=85)	57% (N=23)
Severe	22% (N=25)	17% (N=26)	15% (N=22)	17% (N=73)
Totals	100% (N=113)	100% (N=149)	100% (N=146)	(N=408)

x^2 = n.s (missing cases = 111)

TABLE 9b

Sentencing in the Assault Case by Personality Control

	Personality Control			
Sentence	Low	Moderate	High	Totals
Light	27% (N=34)	27% (N=36)	22% (N=32)	25% (N=102)
Moderate	62% (N=79)	52% (N=68)	58% (N=86)	57% (N=233)
Severe	11% (N=14)	21% (N=28)	21% (N=31)	18% (N=73)
Totals	100% (N=127)	100% (N=132)	100% (N=149)	(N=408)

x^2 = n.s (missing cases = 111)

TABLE 9c

Sentencing in the Assault Case by Cognitive Complexity

	Level of Cognitive Complexity			
Sentence	Low	Moderate	High	Totals
Light	25% (N=14)	23% (N-68)	33% (N=20)	25% (N=102)
Moderate	53% (N-30)	57% (N=166)	61% (N=37)	57% (N=233)
Severe	23% (N=13)	19% (N=56)	7% (N=4)	18% (N=73)
Total	100% (N=57)	100% (N=290)	100% (N=61)	(N=408)

x^2 = n.s (missing cases = 111)

FOOTNOTES

[1] George Graham, Jr. and George Carey, The Post-Behavioral Era: Perspectives on Political Science (New York: David McKay Company, 1972).

[2] For an extensive discussion of the utility of behaviorism see B. F. Skinner, About Behaviorism (New York: Vintage Books, 1974); B. F. Skinner, Science and Human Behavior (New York: Macmillan, 1953), Section I.

[3] W. Ross Ashby, An Introduction to Cybernetics (London: Chapman and Hall, Ltd., 1961), p. 61.

[4] Ibid., p. 106.

[5] Murray Sidman, Tactics of Scientific Research: Evaluating Experimental Data in Psychology (New York: Basic Books, 1960), Part 1; Joseph Sidowski and Robert Lockard, "Some Preliminary Considerations in Research," in Experimental Methods and Instrumentation in Psychology, ed. Joseph Sidowski (New York: McGraw-Hill, 1966), Chapter 1.

[6] James B. Conant, Science and Common Sense (New Haven: Yale University Press, 1951), Chapters 2,3,5; Quentin Gibson, The Logic of Social Enquiry (New York: Humanities Press, 1966); Carl Hempel, Philosophy of Natural Science (Englewood Cliffs: Prentics-Hall, 1966); Carl Hempel, "Operationism, Observation and Scientific Terms," in Philosophy of Science, eds. A. Danto and S. Morgenbesser (New York: World Publishing, 1967); George Homans, The Nature of Social Science (New York: Harcourt, Brace and World, 1967); Abraham Kaplan, The Conduct of Inquiry: Methodology for Behavioral Science (San Fransicso: Chandler, 1967); Ernest Nagel, "The Meaning of Reduction in the Natural Sciences," in Readings in Philosophy of Science, ed. Philip Wiener (New York: Charles Scribner's Sons, 1953).

[7] See, for example John Townsend, Introduction to Experimental Method for Psychology and the Social Sciences (New York: McGraw Hill, 1953), pp. 3-15.

[8] R. S. Woodworth, Experimental Psychology (New York: Henry Hold and Company, 1938).

[9] See, for example Richard Brody and Charles N. Brownstein, "Experimentation and Simulation," in Handbook of Political Science, Vol. 7, eds. Fred Greenstein and Nelson Polsby (Reading: Addison-Wesley, 1975); Robert Woodworth, Experimental Psychology (New York: Henry Holt and Co., 1938), pp. 1-4.

[10]R. A. Fisher, The Design of Experiments, 6th ed. (Edinburg: Oliver and Boyd, 1951).

[11]Donald Campbell and Julian Stanley, Experimental and Quasi-Experimental Designs for Research (Chicago: Rand McNally, 1966).

[12]Brody and Brownstein, op.cit.; Campbell and Stanley, op.cit.; Morris Rosenberg, The Logic of Survey Analysis (New York: Basic Books, 1968); Sidman, op.cit.; John Watson, Behaviorism (New York: W.W. Norton, 1970), pp. 1-47.

[13]H. Brogden. "Some Observations on Two Methods in Psychology," Psychological Bulletin 77 (1972); Donald Campbell and Donald Fiske, "Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix," Psychological Bulletin 56 (1959); Lee Cronbach and Paul Meehl, "Construct Validity in Psychological Tests," Psychological Bulletin 52 (1955); James W. Dyson, "Political Experimentation: Some Theoretical Fragments Pertinent to Experimental Research," paper presented at the Annual Meetings of the American Political Science Association, San Francisco, California, September 1975; Jean Piaget, The Place of the Science of Man in the System of Sciences (New York: Harper and Row, 1974); C.F. Presley, "Laws and Theories in the Physical Sciences," in Philosophy of Science, eds. A. Danto and S. Morgenbesser (New York: World Publishing, 1967), pp. 205-225.

[14]B. F. Skinner, About Behaviorism.

[15]M. Dantico, "Individual Decision-Making: An Experimental Investigation of the Bases for Choice," in Experimental Study of Politics 6 (1977).

[16]Ibid.

[17]Siegfreid Streufert and H. M. Schroder, "Conceptual Structure, Environmental Complexity and Task Performance," Journal of Experimental Research in Personality 1 (1965): 132-137.

[18]James W. Dyson and Marilyn Dantico, "Conceptual Behavior, Human Information Processing and Political Decision-Making," paper presented at the Annual Meetings of the Midwest Political Science Association, Chicago, Illinois, April, 1978. The paper provides the interested reader with a much broader theoretical orientation to the subject.

[19]Stephen Skjei, Information for Collective Action (Lexington, Mass.: Lexington Books, 1973), pp. 9-46.

[20]Steven Keele, Attention and Human Performance (Pacific Palisades, California: Goodyear, 1973), pp. 1-5.

[21]Ibid.

[22]J.C. Welch, "The Measurement of Mental Activity Through Muscular Activity and the Determination of a Constant Attention," American Journal of Physiology 1 (1898): 253-306.

[23]Siegfried Streufert and Susan Streufert, "The Perception of Information Relevance," Psychonomic Science 18 (1970): 199-200.

[24]R. Heslin, B. F. Blake, and J. Rotton, "Information Search as a Function of Stimulus Uncertainty and the Importance of Response," Journal of Personality and Social Psychology 23 (1972):333-339.

[25]Streufert and Streufert, oc.cit.

[26]Dantico, op.cit.

[27]L. Anderson, Discrediting Sources as a Means of Belief Defense of Cultural Truisms," American Psychologist 21 (1966):708; C Hovland and W. Weiss, "The Influence of Source Credibility on Communicator Effectiveness," Public Opinion Quarterly, 15 (1951):635-650.

[28]C. Hovland, I. Janis and H. Kelley, Communication and Persuasion (New Haven: Yale University Press, 1953).

[29]C. Hovland, O. Harvey and M. Sherif, "Assimilation and Contrast Effects in Speech and Attitude Change," Journal of Abnormal and Social Psychology 55 (1957):242-252.

[30]D. Campbell, "Enhancement of Contrast as Composit Habit," Journal of Abnormal and Social Psychology 53 (1956):350-355; H. Pajfel and A. Wilkes, "Classification and Quantitative Judgment,: British Journal of Psychology 54 (1963):101-114.

[31]Andersen, op.cit.; W. McGuire, "The Nature of Attitudes and Attitude Change," in Handbook of Social Psychology, Vol. 3, eds. G. Lindzey and E. Aronson (Reading: Addison-Wesley, 1954), pp.136-314.

[32]Categories for treatment levels have been collapsed from 12 to 4 to facilitate interpretation of the tables. The categories are intended to preserve the integrity of the original treatments. Two things are striking about the treatment levels: (1) the advantage of female plaintiffs, and (2) the advantage a witness brings to the defendant. As it is probably reasonable to argue that black defendants are not 'favored' but rather that white defendants are 'disfavored' and as racial affect patterns conform to the more general pattern, race is not used as a distinguishing category. The new categories are: (1) no witness, male plaintiff regardless of defendant's race; (2) no witness, female plaintiff regardless of defendant's race; (3) witness, male plaintiff, regardless of defendant's race; (4) witness, female plaintiff; ragardless of defendant's race.

[33]Carl Hovland, Irving Janis, and Harold Kelley, Communication and Persuasion: Psychological Studies of Opinion Change (New Haven: Yale University Press, 1953); Gerald Miller and Michael Burgoon, New Techniques of Persuasion (New York: Harper and Row, 1973).

[34]Lyle Bourne, Jr. and William Battig, "Complex Processes," in Experimental Methods and Instrumentation in Psychology, ed. Joseph B. Sidowski (New York: McGraw Hill, 1966), p. 541.

[35]W. Edwards, The Theory of Decision Making," Psychological Bullenin 51 (1954):201-214; W. Edwards, "A Perspective on Automation and Decision Making," in Decisions, Values and Groups, ed. D. Willner (New York: Pergamon Press, 1960); W. Edwards, "Bhavioral Decision Theory," Annual Review of Psychology 12 (1961):473-498; R. Gagne, "Problem Solving and Thinking," Annual Review of Psychology 10 (1950):147-152.

[36]Max Wertheimer, Productive Thinking (New York: Harper and Row, 1945) pp. 40-50, 193.